

COMMONWEALTH OF VIRGINIA  
STATE AIR POLLUTION CONTROL BOARD  
REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION

9 VAC 5 CHAPTER 40.  
EXISTING STATIONARY SOURCES.

PART II.  
Emission Standards.

ARTICLE 51.  
Emission Standards for Stationary Sources Subject to  
Case-by-Case RACT Determinations (Rule 4-51).

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- 9 VAC 5-40-7530. Facility and control equipment maintenance or malfunction
- 9 VAC 5-40-7540. Permits

9 VAC 5-40-7370. Applicability and designation of affected facility.

A. The affected facility to which the provisions of this article apply is each facility that is within a stationary source that has a theoretical potential to emit equal to or greater than the applicable source threshold specified in Table 4-51A or 4-51B, and Table 4-51C or 4-51E.

B. The provisions of this article apply to all Emission Control Areas as defined in 9 VAC 5-20-206 and indicated in Table 4-51A or 4-51B, and Table 4-51C or 4-51E.

C. The provisions of this article do not apply to a particular pollutant from an affected

facility if the affected facility is subject to other emission standards in this chapter covering the same pollutant.

#### 9 VAC 5-40-7380. Definitions.

A. For the purpose of applying this article in the context of the Regulations for the Control and Abatement of Air Pollution and related uses, the words or terms shall have the meanings given them in subsection C of this section.

B. As used in this article, all terms not defined here shall have the meanings given them in 9 VAC 5 Chapter 10 (9 VAC 5-10), unless otherwise required by context.

#### C. Terms defined.

“Capacity factor” means the ratio of the average load on a machine or equipment for the period of time considered to be the capacity rating of the machine or equipment.

“Combustion modification” means any change to the configuration of the burners or the firing method or mechanism of any combustion equipment for the purpose of reducing the emissions of nitrogen oxides. Acceptable combustion equipment changes within the context of this term include, but are not limited to, reburning, burners out of service, flue gas recirculation, fuel substitution, engine adjustments, engine modifications, fuel modifications and the addition of over fire air and low nitrogen oxides burner systems.

“Fossil fuel” means natural gas, petroleum, coal and any form of solid, liquid or gaseous fuel derived from such materials for the purpose of creating useful heat.

“Fuel burning equipment” means any furnace, with fuel burning equipment appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat to be utilized by indirect heat transfer or producing power. This includes facilities that are designed as boilers to produce steam or heated water and are designed to burn either fossil fuel or refuse derived fuel. It does not include such facilities if designed primarily to burn raw refuse.

“Gas turbine” means a rotary internal combustion engine fueled by liquid or gaseous fuel.

“Heat input” means the total gross calorific value of all fuels burned.

“Incinerator” means any device, apparatus, equipment, or structure using combustion or pyrolysis for destroying, or reducing the volume of any material or substance.

“Internal combustion engine” means a reciprocating engine which is fueled by liquid or gaseous fuel.

“Presumptive RACT” means the emission limit that a particular source is capable of meeting by the application of reasonably available control technology that is defined in 9 VAC 5-40-7430.

“Process heater” means any fuel burning equipment which is used to produce heat for use in a manufacturing process. This term includes boilers that use a heat transfer medium other than water, but does not include drying ovens, steam generating units, or other drying apparatus.

“Rated capacity” means the capacity as stipulated in the purchase contract for the condition of 100% load, or such other capacities as mutually agreed to by the board and owner using good engineering judgment.

“Reasonably available control technology” or “RACT” means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available, considering technological and economic feasibility.

“Refuse derived fuel (RDF)” means fuel produced from solid or liquid waste (includes materials customarily referred to as refuse and other discarded materials) or both that has been segregated and classified, with the useable portions being put through a size reduction and classification process which results in a relatively homogeneous mixture.

“Steam generating unit” means any furnace, boiler or other device used for combusting fuel for the purpose of producing steam.

“Theoretical potential to emit” means the maximum capacity of a stationary source to emit a pollutant based on emissions at design capacity or maximum production and maximum operating hours (8,760 hours/year) before add-on controls, unless the facility is subject to state and federally enforceable permit conditions that limit production rates or hours of operation. Emissions from all facilities, including facilities exempt from any other emission standard for volatile organic compounds or nitrogen oxides in this chapter, shall be added together to determine theoretical potential to emit.

“Tpy” means tons per year.

9 VAC 5-40-7390. Standard for volatile organic compounds (1-hour ozone standard).

A. No owner or other person shall cause or permit to be discharged from any affected facility any volatile organic compounds (VOCs) emissions in excess of that resultant from using RACT.

B. The provisions of this section apply to all facilities that (i) are within a stationary source in the emissions control areas specified in Table 4-51A and (ii) are within a stationary source that has a theoretical potential to emit at the applicable source thresholds specified Table 4-51A.

TABLE 4-51A.  
NOTIFICATION AND COMPLIANCE DATES FOR  
FACILITIES LOCATED IN  
VOC EMISSIONS CONTROL AREAS

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	COMPLIANCE DATE
Richmond	≥ 100 tpy	October 1, 1991	May 31, 1995
Northern Virginia	≥ 100 tpy	October 1, 1991	May 31, 1995
Northern Virginia	≥ 50 tpy and <100 tpy	April 1, 1993	May 31, 1995
Northern Virginia	≥ 25 tpy and < 50 tpy	July 1, 1996	May 31, 1996

C. For facilities subject to the provisions of this section, the owners shall, by the notification dates specified in Table 4-51A, (i) notify the board of their applicability status, (ii) commit to making a determination as to what constitutes RACT for the facilities and (iii) provide a schedule acceptable to the board for making this determination and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51A.

D. For the purposes of this section only, the Richmond Emissions Control Area shall not include Prince George County and Petersburg City.

9 VAC 5-40-7400. Standard for volatile organic compounds (8-hour ozone standard).

A. No owner or other person shall cause or permit to be discharged from any affected facility any volatile organic compounds (VOCs) emissions in excess of that resultant from using RACT.

B. The provisions of this section apply to all facilities that (i) are within a stationary source in the emissions control areas specified in Table 4-51B and (ii) are within a stationary source that has a theoretical potential to emit at the applicable source thresholds specified Table 4-51B.

TABLE 4-51B.  
NOTIFICATION AND COMPLIANCE DATES FOR  
FACILITIES LOCATED IN  
VOC EMISSIONS CONTROL AREAS

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	COMPLIANCE DATE
Northern Virginia	≥ 50 tpy	March 1, 2007	April 1, 2009

C. For facilities subject to the provisions of this section, the owners shall, by the notification dates specified in Table 4-51B, (i) notify the board of their applicability status, (ii) commit to making a determination as to what constitutes RACT for the facilities and (iii) provide a schedule acceptable to the board for making this determination and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51B.

D. Nothing in this article shall exempt any facility subject to the provisions of 9 VAC 5-40-7390 from being subject to the provisions of this section. The board may reevaluate any RACT determination made under 9 VAC 5-40-7390 and require compliance with a new RACT determination as necessary to implement this section.

E. Upon the request of the board, the owner of a facility subject to or exempt from the provisions of 9 VAC 5-40-7390 shall provide such information as the board deems necessary to determine if the facility is subject to this section.

9 VAC 5-40-7410. Standard for nitrogen oxides (1-hour ozone standard).

A. No owner or other person shall cause or permit to be discharged from any affected facility any nitrogen oxides (NO<sub>x</sub>) emissions in excess of that resultant from using RACT.

B. Unless the owner demonstrates otherwise to the satisfaction of the board, facilities to which the presumptive RACT provisions of 9 VAC 5-40-7430 are applicable shall comply with the provisions of subsection A of this section by the use of presumptive RACT.

C. The provisions of this section apply to all facilities that (i) are within a stationary source in the emissions control areas specified in Table 4-51C and (ii) are within a stationary source that has a theoretical potential to emit at the applicable source thresholds specified in Table 4-51C.

TABLE 4-51C.  
NOTIFICATION AND COMPLIANCE DATES FOR FACILITIES  
LOCATED IN NOX EMISSIONS CONTROL AREAS  
FOR WHICH THERE IS NO PRESUMPTIVE RACT

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	COMPLIANCE DATE
Northern Virginia	≥ 50 tpy	April 1, 1993	May 31, 1995
Northern Virginia	≥ 25 tpy and < 50 tpy	September 4, 2003	November 15, 2005
Western Virginia	≥ 100 tpy	June 24, 2004	November 15, 2005

D. For facilities subject to the provisions of this section and for which there is no presumptive RACT definition, the owners shall, by the notification dates specified in Table 4-51C, (i) notify the board of their applicability status, (ii) commit to making a determination as to what constitutes RACT for the facilities and (iii) provide a schedule acceptable to the board for making this determination and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51C.

E. For facilities subject to the provisions of this section and for which there is a presumptive RACT definition, the owners shall, by the notification dates specified in Table 4-51D, (i) notify the board of their applicability status, (ii) commit to accepting the presumptive RACT emission limits as RACT for the applicable facilities or to submitting a

demonstration as provided in subsection B of this section and (iii) provide a schedule acceptable to the board for submitting the demonstration no later than the demonstration dates specified in Table 4-51D, and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51D.

TABLE 4-51D.  
NOTIFICATION AND COMPLIANCE DATES FOR FACILITIES  
LOCATED IN NOX EMISSIONS CONTROL AREAS  
FOR WHICH PRESUMPTIVE RACT IS DEFINED

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	DEMONSTRATION DATE	COMPLIANCE DATE
Northern Virginia	≥ 50 tpy	April 1, 1993	January 1, 1994	May 31, 1995
Northern Virginia	≥ 25 tpy and < 50 tpy	September 4, 2003	January 1, 2004	November 15, 2005
Western Virginia	≥ 100 tpy	June 24, 2004	January 1, 2004	November 15, 2005

F. No owner or other person shall cause or permit to be discharged from any facility any NO<sub>x</sub> emissions in excess of those necessary to achieve emissions reductions identified in any attainment or maintenance plan or any other legally enforceable document submitted to the U.S. Environmental Protection Agency as a revision to the state implementation plan.

1. The facilities to which the provisions of this subsection apply are facilities within any emissions control area (see 9 VAC 5-20-206) identified in any attainment or maintenance plan submitted to the U.S. Environmental Protection Agency as a revision to the state implementation plan.

2. The board may establish case-by-case emission limits and other requirements as may be necessary to achieve the required emission reductions via permits, consent orders, or other legally enforceable means.

3. Facilities subject to this subsection shall be in compliance with any limits and other requirements established pursuant to subsection 2 of this subsection within the timeframes established in any state plan revision, permit, or other legally enforceable document.

9 VAC 5-40-7420. Standard for nitrogen oxides (8-hour ozone standard).

A. No owner or other person shall cause or permit to be discharged from any affected facility any nitrogen oxides (NO<sub>x</sub>) emissions in excess of that resultant from using RACT.

B. Unless the owner demonstrates otherwise to the satisfaction of the board, facilities to which the presumptive RACT provisions of 9 VAC 5-40-7430 are applicable shall comply with the provisions of subsection A of this section by the use of presumptive RACT.

C. The provisions of this section apply to all facilities that (i) are within a stationary source in the emissions control areas specified in Table 4-51E and (ii) are within a stationary source that has a theoretical potential to emit at the applicable source thresholds specified in Table 4-51E.

TABLE 4-51E.  
NOTIFICATION AND COMPLIANCE DATES FOR FACILITIES  
LOCATED IN NOX EMISSIONS CONTROL AREAS  
FOR WHICH THERE IS NO PRESUMPTIVE RACT

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	COMPLIANCE DATE
Northern Virginia	≥ 100 tpy	March 1, 2007	April 1, 2009

D. For facilities subject to the provisions of this section and for which there is no presumptive RACT definition, the owners shall, by the notification dates specified in Table 4-51E, (i) notify the board of their applicability status, (ii) commit to making a determination as to what constitutes RACT for the facilities and (iii) provide a schedule acceptable to the board for making this determination and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51E.

E. For facilities subject to the provisions of this section and for which there is a presumptive RACT definition, the owners shall, by the notification dates specified in Table 4-51F, (i) notify the board of their applicability status, (ii) commit to accepting the presumptive RACT emission limits as RACT for the applicable facilities or to submitting a demonstration as provided in subsection B of this section and (iii) provide a schedule acceptable to the board for submitting the demonstration no later than the demonstration dates specified in Table 4-51F, and for achieving compliance with the emission standard as expeditiously as possible but no later than the compliance dates specified in Table 4-51F.

TABLE 4-51F.  
NOTIFICATION AND COMPLIANCE DATES FOR FACILITIES  
LOCATED IN NOX EMISSIONS CONTROL AREAS  
FOR WHICH PRESUMPTIVE RACT IS DEFINED

EMISSIONS CONTROL AREA	SOURCE THRESHOLD	NOTIFICATION DATE	DEMONSTRATION DATE	COMPLIANCE DATE
Northern Virginia	≥ 100 tpy	March 1, 2007	June 1, 2007	April 1, 2009

F. Nothing in this article shall exempt any facility subject to the provisions of 9 VAC 5-40-7390 from being subject to the provisions of this section. The board may reevaluate any RACT determination made under 9 VAC 5-40-7410 and require compliance with a new RACT determination as necessary to implement this section.

G. Upon the request of the board, the owner of a facility subject to or exempt from the provisions of 9 VAC 5-40-7390 shall provide such information as the board deems

necessary to determine if the facility is subject to this section.

9 VAC 5-40-7430. Presumptive reasonably available control technology guidelines for stationary sources of nitrogen oxides.

A. Unless otherwise approved by the board, this section defines presumptive RACT for the purposes of compliance with 9 VAC 5-40-7410 A or 9 VAC 5-20-7420 A for the source types specified here.

B. Presumptive RACT is defined as follows.

1. For the source types listed below, RACT is defined as the emission limits specified below based upon the application of combustion modification; however, owners may elect to use any alternative control technology, provided such alternative is capable of achieving the prescribed emission limits.

a. The maximum allowable emission rate for NO<sub>x</sub> from steam generating units and process heaters is as follows:

TABLE 4-51G.  
MAXIMUM ALLOWABLE EMISSION RATES FOR NO<sub>x</sub> EMISSIONS  
FROM STEAM GENERATING UNITS AND PROCESS HEATERS  
(POUNDS PER MILLION BTU HEAT INPUT)

Fuel Type	Firing Method		
	Face* and Tangential	Cyclone	Stokers
Coal – wet bottom	1.0	.55	N/A
Coal – dry bottom	.38	N/A	0.4
Oil or Gas or both	.25	.43	N/A
Gas only	.20	N/A	N/A

\* Includes wall, opposed and vertical firing methods

b. The maximum allowable emission rate for NO<sub>x</sub> from gas turbines is as follows:

TABLE 4-51H.  
MAXIMUM ALLOWABLE EMISSION RATES FOR NO<sub>x</sub> EMISSIONS  
FROM GAS TURBINES  
(PARTS PER MILLION BY DRY VOLUME CORRECTED TO 15% OXYGEN)

Fuel Type	Turbine Type
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	Simple Cycle	Combined Cycle
Gas	42	42
Oil	65/77*	65/77*

\* Limit shall be 65 ppm for fuel bound nitrogen (FBN) < 0.015% and 77 ppm for FBN = .015%.

2. Any demonstration of compliance with the limits in subdivision B 1 of this section shall be on a daily basis.

3. The following sources are not required to make demonstration of RACT as required by 9 VAC 5-40-7410 B or 9 VAC 5-40-7420 B.

a. Any steam generating unit, process heater or gas turbine with an annual capacity factor of less than 5.0%, except that three months following any calendar year during which the capacity factor is 5.0% or greater, the facility shall be subject to 9 VAC 5-40-7410 A or B, or 9 VAC 5-40-7420 A or B, as applicable, and the owner shall comply with 9 VAC 5-40-7410 D or E, or 9 VAC 5-40-7420 D or E, as applicable, except the compliance date shall be two years after approval of the schedule by the board. Time periods during which a stand-by unit is used to provide replacement services for a unit being altered to comply with the provisions of 9 VAC 5-40-7410 A or B, or 9 VAC 5-40-7420 A or B, shall not be used as the basis for a determination that the stand-by unit exceeded the annual capacity factor criteria of 5.0%.

b. Any stationary internal combustion engine with a rated capacity of less than 450 hp of output power.

c. Any incinerator with a maximum capacity of less than 50 tons of waste per day.

d. Any incinerator or thermal or catalytic oxidizer used exclusively as air pollution control equipment.

e. Any generator used solely to supply emergency power to buildings during periods when normal power supplies are interrupted and during periods of scheduled maintenance.

9 VAC 5-40-7440. Standard for visible emissions.

The provisions of Article 1 (9 VAC 5-40-60 et seq.) of this chapter (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply.

9 VAC 5-40-7450. Standard for fugitive dust/emissions.

The provisions of Article 1 (9 VAC 5-40-60 et seq.) of this chapter (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply.

9 VAC 5-40-7460. Standard for odor.

The provisions of Article 2 (9 VAC 5-40-130 et seq.) of this chapter (Emission Standards for Odor, Rule 4-2) apply.

9 VAC 5-40-7470. Standard for toxic pollutants.

The provisions of Article 4 (9 VAC 5-60-200 et seq.) of 9 VAC 5 Chapter 60 (Emission Standards for Toxic Pollutants, Rule 6-4) apply.

9 VAC 5-40-7480. Compliance.

The provisions of 9 VAC 5-40-20 (Compliance) apply.

9 VAC 5-40-7490. Test methods and procedures.

The provisions of 9 VAC 5-40-30 (Emission Testing) apply.

9 VAC 5-40-7500. Monitoring.

The provisions of 9 VAC 5-40-40 (Monitoring) apply.

9 VAC 5-40-7510. Notification, records and reporting.

The provisions of 9 VAC 5-40-50 (Notification, Records and Reporting) apply.

9 VAC 5-40-7520. Registration.

The provisions of 9 VAC 5-20-160 (Registration) apply.

9 VAC 5-40-7530. Facility and control equipment maintenance or malfunction.

The provisions of 9 VAC 5-20-180 (Facility and Control Equipment Maintenance or Malfunction) apply.

9 VAC 5-40-7540. Permits.

A permit may be required prior to beginning any of the activities specified below and the provisions of 9 VAC 5 Chapter 50 (9 VAC 5-50) and 9 VAC 5 Chapter 80 (9 VAC 5-80) may apply. Owners contemplating such action should contact the appropriate regional office for guidance.

A. Construction of a facility.

B. Reconstruction (replacement of more than half) of a facility.

- C. Modification (any physical change to equipment) of a facility.
- D. Relocation of a facility.
- E. Reactivation (restart-up) of a facility.
- F. Operation of a facility.

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